



Environmental issues in One Health, from risk assessment to prevention: challenges and ways forward. The debate and outcomes of the One Health EJP Summer School 2021

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INTRODUCTION

One Health (OH) is a comprehensive and multi-sectorial approach to examine and assess the health of animals, humans and the environment using an integrated approach. While the OH approach gains increasing momentum, there are challenges associated with its practical application. One such challenge is the role of environment, a key OH pillar, yet, 'how' do we implement environmental issues in OH? Implementation calls for identifying priority areas in addition to updated models. Environmental issues in OH may present a range of multi-faceted aspects, including the role of ecosystem-related factors and of human associated factors, and the interactions between sustainability and risk assessment; indeed, the environmental aspects of OH appear as an ideal field to develop transdisciplinary interactions. The One Health European Joint Programme (OHEJP), an EU scientific initiative on OH, has developed a training programme that includes annual Summer Schools organised and hosted by one of 44 OHEJP consortium partners. In 2021, the OHEJP held its third Summer School, the first international training event dedicated to 'Environmental issues in OH: from risk assessment to surveillance'.

METHODOLOGY

The Summer School was organised by the OHEJP's Italian partner, Istituto Superiore di Sanità - (ISS) supported by the OHEJP Education and Training team at the University of Surrey. The event was held online due to the COVID-19 pandemic. Accordingly, participation was free: selection criteria for participants included preference towards early career researchers, and a balance between genders, OHEJP vs non-OHEJP (including non-EU) institutes, and disciplines.

The programme was delivered over two weeks with lectures and working groups each morning and afternoon respectively. In total, 35 delegates were selected and a further 6 places were designated to EU and international agencies, as OHEJP's stakeholders. Topics

were dealt with using an interdisciplinary approach and included: risk assessment, epidemiology, and surveillance of biological and chemical hazards; factors related to natural or man-made environments; human nutrition, food security and sustainability; science-policy and science-society cross-talks. Lecturers included experts from across the globe, including from ISS, OHEJP and non-OHEJP institutes, EEA, EFSA, FAO, OIE, WHO and the Italian Ministry of Health.

RESULTS

The OHEJP Summer School 2021 was the first international training event entirely devoted to environmental issues in OH at a global level, and the appetite for such an event was demonstrated when almost 300 applications were received. The 41 selected delegates came from across the globe (Europe, Asia, and Africa), from a range of career stages, interdisciplinary backgrounds, skills and experience from animal, human and environmental health domains: six of them came from the OHEJP's stakeholder organisations EFSA, FAO, OIE and EEA. The challenging organisational work was rewarded by enthusiastic participation. Innovative topics, such as the role of wildlife in OH, the OH approaches to human nutrition and food security, and communication in OH, raised special interest. Each working group developed an OH assessment and recommended actions to risk managers in relation to: mycotoxins and climate change, West Nile Virus, *Brucella canis*, Shiga toxin-producing *Escherichia coli* (STEC) and methylmercury. The outcomes demonstrated the potential of interdisciplinary training to foster the development of consensus positions on OH topics.

DISCUSSION

This OHEJP-led pilot initiative needs to be implemented at national level; its themes may be relevant for updating the academic training syllabus in human and veterinary medicine as well as life sciences. A growing body of interdisciplinary evidence substantiates that environmental conditions directly influence the risk from biological and chemical hazards; major environmental drivers such as climate change and sustainable food production directly call for an OH approach, involving transdisciplinary data sharing. Most importantly, the evidence-based implementation of the OH environmental pillar will help advance the science-to-policy transfer, which is critical for OH governance.